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Circular Letters:

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<u>Venous Catheterization of the Heart</u>: Werner Forssman was the first
to pass a catheter into the heart of a living person, himself, with the
help of a surgical colleague who made the incision over the median
basilic vein in the antecubital space. Others subsequently used the same
technic for various purposes, some radiologists attempting visualization of
the cardiac chambers and pulmonary arteries by this means. The lumen of
the catheter, however, was too small to permit rapid filling of the chambers
with radiopaque material, and the introduction of the Robb-Steinberg technic
of angiocardiography has made catheterization of the heart unnecessary for
that purpose. Cournand and Ranges and their associates have used venous cathe-
terization more than any group in this country, largely in the study of cardio-
vascular dynamics, particularly in shock. Their report in 1941 stimulated
others to use the venous catheter, and up to the present time considerable
literature has accumulated on the subject.

Cournand, in 1945, reported 1,200 such examinations with no fatalities
and no serious complications from the passage of the catheter. However,
the author knows of one death in another institution following the injection
of diodrast through the catheter in a patient who had been injected with the
same medium ten days before.

Fluoroscopy is essential with venous catheterization; yet the author could
find but one paper in the American radiological journals, that of Conte and
Costa in <u>Radiology</u>, 1933, mentioning the use of the catheter in the right side
of the heart for the purpose of better visualization of the pulmonary arteries.
Most of the reports have been concerned with research problems and clinical
investigations, but there are practical useful applications, particularly in the
study of congenital heart disease, which it is desired to emphasize.

<u>Indications</u>. Catheterization of the right side of the heart is most useful
in the study of hemodynamics, both in establishing the normals for physiologi-
cal variations and the changes in the varied forms of heart failure, cardio-
pulmonary disease, and shock. It is valuable, also, in helping to establish
the diagnosis more accurately in congenital heart disease. In addition, the
method has been used in the study of cerebral, renal, and hepatic physiology
in health and disease, by the collection of samples of blood from the jugular,
renal, or hepatic veins as desired.

In this series, the first 100 such examinations were done for the follow-
ing purposes:

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Congenital heart disease	39
Other heart disease	15
Renal function studies	20
Normals	18
Pulmonocardiac disease and others	8
Total	100

The first such examination at the Peter Bent Brigham Hospital was done on 8 November 1944, and the one hundredth on 13 November 1946. The original purpose of Doctor Dexter, who with his team has carried out all of these examinations without a single mishap, was to study renal physiology, but it soon became apparent that the method could be more useful in the study of congenital heart disease, particularly in helping to select suitable patients for operation, and most of the recent cases have been of this type. The exact and accurate diagnosis of the individual type of congenital heart disease, which was formerly interesting but unimportant, has now, with the tremendous advances in curative cardiac surgery, become necessary and important.

Technic. The technic of performing venous catheterization of the heart has already been published. Slight modifications have been made from time to time by the different persons using the method. At present the author and associates use the single lumen catheter, size 9 French, made of woven silk, and radiopaque, with the orifice at the tip. It is from 100 to 125 cm. in length, flexible, and yet stiff enough so that it can be rotated by twisting the exposed end, without buckling. It should have a slight curve or bend near the tip to facilitate its passage into the different parts of the cardiovascular system, which is accomplished by aiming it in different directions under fluoroscopic observation.

Under strict aseptic precautions, an incision is made through the skin over the median basilic vein in either the right or left antecubital space, using novocaine anesthesia. The catheter is then threaded into the vein, advanced under fluoroscopic guidance, and "aimed" at the desired area by pushing and twisting the proximal end. Success in getting the tip into the various chambers and into the pulmonary arteries depends upon the patience and persistence of the operator.

Radioscopy is done on a horizontal table equipped with a spot-film device, and is made as brief as possible, compatible with the demands in the individual case. The author and associates use 80 kv., from 4 to 5 ma. of current, and as small a field (diaphragm) as possible. Observations are intermittent, not continuous, and the total exposure to any one part of the

body surface is not allowed to exceed 10 minutes. A self-recording time-clock should be installed in the fluoroscope circuit to prevent overexposure, and in the author's department all radioscopy is controlled or supervised by one of the radiologists or residents in radiology. The spot films are made with 80 kv., 75 ma., and, in a patient of average thickness, an exposure of 0.2 second. This varies, of course, in younger and in more obese individuals from 0.1 to 0.4 second. In cases in which there is some doubt concerning the exact position of the tip of the catheter, oblique films are also taken.

The catheter is thus passed upward into the axillary vein, the superior vena cava, and into the right auricle. From there it may be passed downward into the inferior vena cava as the patient takes a deep inspiration, and into either right or left renal vein as desired, or into one of the hepatic veins. If the tip is turned medially in the right auricle by twisting the outer end, it may then be passed through the tricuspid valve into the right ventricle. The tip of the catheter moves with each cardiac pulsation, slightly in the auricle, but much more in amplitude of excursion when the right ventricle is entered. This helps to determine the intracardiac position of the catheter. The sudden elevation of pressure and the vigorous systolic pulsations, as shown by the manometer, when the right ventricle is entered, also help to locate the catheter. It may be coiled up in the right auricle and thus give a reasonably good idea of the size of this chamber.

From the right ventricle, the catheter may be introduced through the pulmonary valve into the pulmonary artery. At this point it may be guided into either the right or left pulmonary artery as desired, and may be passed well out into the smaller branches of the pulmonary artery until the tip occludes the branch in which it lies. In patients with congenital heart disease, two or three samples of blood are withdrawn through the catheter from the pulmonary artery or its branches, from the right ventricle, from the right auricle, and from the superior vena cava, and spot films are taken of the tip of the catheter in the various positions numbered to correspond to the numbered samples of blood. Before collecting the sample for analysis, 4 or 5 c.c. of blood are withdrawn and discarded, in order to avoid admixture and dilution with the saline perfusing the catheter. All samples are taken under oil to be analyzed for their oxygen content. The withdrawal of samples is facilitated by a Luer-Lok syringe with a tightly fitting adapter on the proximal end of the catheter. Clotting of blood in the catheter is prevented by a continuous perfusion of normal saline from a saline reservoir. From 15 to 60 drops per minute is the usual rate of flow and is not enough to dilute the blood volume or to impair the accuracy of determinations from the samples taken. The hematocrit determinations and the oxygen capacity of the blood samples have been found to be unchanged during the procedure in a one-hour or two-hour period of observation.

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All patients have a basal metabolism test on the morning of the proce-
dure, just preceding the catheterization, to determine their oxygen consump-
tion. Arterial blood is withdrawn under oil by puncture of the femoral artery,
ror determination of arterial oxygen saturation.

The comfort of the patient is important for the success of the test. A
synthetic rubber mattress is used for all patients and does not interfere with
fluoroscopy or films. The arm is supported on a comfortable rigid armrest
projecting at a right angle from the table, allowing easy access to the opera-
tive field, permitting freedom of movement by the operator, and avoiding con-
tamination of the sterile operative field by the fluoroscopic screen. The pa-
tient's head is made comfortable on soft pillows, with the face turned away
from the area of operation. This also avoids trauma to the patient's nose
and chin when the fluoroscopic screen is moved into position. Commotions,
noises, conversation, and interruptions are kept to a minimum. Sedatives
may be used in nervous or apprehensive individuals, and in young children
anesthesia may be required.

Failures and Errors. Failure to secure adequate or reliable data from
this test has been infrequent; only 13 examinations out of 100 were unsatis-
factory. Spasm of the vein around the catheter in the arm may prevent pas-
sage to the desired spot but has not interfered with withdrawal of the catheter.
Venospasm is more apt to occur if the patient is uncomfortable or in pain,
and less apt to occur with good local anesthesia and with use of the rubber
mattress. Novocaine should be used liberally around the skin incision. Two
examinations were unsatisfactory owing to venospasm. Two others failed
because of a poor catheter which did not have the proper curve at the tip
and which could not be guided where desired. The other failures were due to
kinking of the catheter at junction points in the venous system, to inexperience
early in the series, to uncooperative patients, to failure of the manometer
in one case, and to lack of adequate veins in two cases.

Dangers and Sequelae. When trying to pass the tip of the catheter through
the tricuspid valve, ventricular extrasystoles occur in about half of the cases.
These cause the only subjective sensation in the great majority of patients.
A few patients have mentioned an accompanying sensation of tightness in the
substernal area or neck, and one patient was made breathless when the tip
of the catheter was still in the right auricle. In only two instances were the
subjective symptoms distressing enough to cause abandonment of the procedure.

The dangers most commonly feared are damage to the endothelium of the
large veins or of the heart, and the possibility of thrombus formation in or on
the catheter. So far no thrombi have been formed on the waxed catheter, and

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no clots are formed in the catheter if the saline perfusion is kept going at 15 drops per minute or more. Several of this group of patients have succumbed to their disease or conditions not in any way related to the procedure, and in 10 autopsies no trace of damage could be found in the lining endothelium of the superior vena cava, the right auricle, the right ventricle, the pulmonary arteries, or on the valves. Many of the patients have local thrombosis of the vein at the point of incision, and a few have had mild inflammatory reactions around the area of skin incision. All have subsided promptly on conservative treatment with no deleterious sequelae. (Radiology, May '47 - M. C. Sosman)

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Venous Catheterization in Congenital Heart Lesions: Congenital heart lesions are notorious for their lack of characteristic signs and symptoms. Venous catheterization, as developed by Cournand and Ranges, presents an opportunity in the work-up of these cases for the recognition of certain defects, for an estimation of the physiological magnitude of the shunts of blood, and for the study of the circulatory dynamics of these patients. Details of the procedure and methods of calculation of blood flows have been reported elsewhere.

Auricular Septal Defect. In the presence of an auricular septal defect, blood usually flows from the left auricle to the right auricle. The venous catheter is helpful in the recognition of this defect in two ways: the catheter may be introduced through the defect, or arterial blood may be found in the right auricle.

Ventricular Septal Defect. An uncomplicated defect in the interventricular septum results in a shunting of arterial blood from the left ventricle to the right ventricle. Its recognition by venous catheterization depends on finding a significantly higher oxygen content of blood in the right ventricle than in the right auricle. Two such cases have been described recently by Baldwin, Moore, and Noble.

Tetralogy of Fallot. The tetralogy of Fallot consists of pulmonic stenosis, interventricular septal defect, over-riding or dextro-position of the aorta, and right ventricular hypertrophy. Due to the pulmonic stenosis, venous blood enters the pulmonary artery with difficulty and some is shunted through the septal defect and into the aorta. These patients are, therefore, cyanotic and suffer mainly from a deficient blood flow through the lungs. The venous catheter may follow one of two courses. It may pass through the stenosed pulmonary valve into the pulmonary artery, or it may pass through the interventricular septal defect and go directly into the over-riding aorta.

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Patent Ductus Arteriosus. Patent ductus arteriosus is a vascular ana-
stomosis between the aorta and pulmonary artery which during fetal life
serves to by-pass the lungs. Its persistence after birth is deleterious, owing
to the ease with which bacterial vegetations become implanted and also to the
circulatory strain thrown on the left ventricle. Since the flow of blood after
birth is from the aorta, where the pressure is high, to the pulmonary artery,
where it is low, there is no cyanosis and the lesion is detectable on venous
catheterization by finding arterial blood in the pulmonary artery or, in other
words, blood with a higher oxygen content in the pulmonary artery than in the
right ventricle.

To obtain interpretable results in congenital heart disease, venous cathe-
terization must be performed by a well trained team of at least three persons
working smoothly and efficiently, and should be used in conjunction with the
usual procedures of history, physical examination, electrocardiography,
fluoroscopy and, if available, the Robb-Steinberg technic of visualization of
the cardiac chambers with diodrast. Venous catheterization is essentially
a physiological procedure. Now that cure or improvement of certain congeni-
tal cardiac defects is possible by surgery, venous catheterization promises
to be an important aid in preoperative diagnosis.' (Radiology, May '47 -
L. Dexter)

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Differential Diagnosis of Intracranial Neoplasms by Cerebral Angio-
graphy: In the diagnosis of intracranial tumor the objectives are to deter-
mine (1) the site of the lesion and (2) its histologic character. The first goal,
so important for the surgical treatment, has been attained with a high degree
of accuracy by the combined use of various diagnostic methods; the second
is far more difficult but when accomplished is of considerable prognostic
importance.

Intracranial angiography not only has proved to be a reliable method for
the localization of cerebral tumors, but frequently furnishes information con-
cerning the pathologic-anatomic type of the neoplasm by demonstrating a
specific vascular pattern. In this respect the method is decidedly superior
to ventriculography. Differences in vascularization of cerebral tumors have
been known to neuropathologists and neurosurgeons for a long time and have
recently been studied by advanced histologic methods. In certain neoplasms,
differences of vascular design are of such gross nature that they can be
demonstrated by angiography.

Egas Moniz and his pupils were the first to point out the angiographic
features of angiomas, meningiomas, and certain vascular gliomas. They

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also recognized a conspicuous absence of vascularity in cysts, abscesses, and cholesteatomas. Tonnis and Hemmingson described certain changes characteristic for glioblastoma. With increasing angiographic experience, a number of workers have studied the specific arrangement of blood vessels encountered in various types of intracranial neoplasms.

In a series of 125 patients with intracranial tumor subjected to angiography at the University of Michigan Hospital, a special vascular pattern was observed in the following groups: angioma, meningioma, glioblastoma, and certain types of astrocytoma. It must be emphasized that a characteristic vascular pattern is not always to be found in such cases, but if it can be demonstrated, it may be considered as almost pathognomonic.

Angioma (8 cases). Most of the lesions loosely designated as cerebral angiomas in reality are arteriovenous malformations. Although this group has been described in a previous communication, it will be discussed again to stress the features differentiating it from other intracranial lesions.

In arteriovenous malformations, (6 of the above 8 cases), one or several enlarged and unusually tortuous arteries lead to a tangle of smaller vessels forming a more or less well defined mass. From this angiomatous malformation one or more greatly dilated and redundant veins emerge, carrying a mixture of arterial and venous blood. The entire vascular malformation, including the venous connections, is shown during the arterial phase of angiography, since the contrast medium enters directly into venous channels through sizable arteriovenous connections within the angioma. Because of this rapid transit of blood, no filling is obtained during the venous phase.

Arteriovenous malformations are found most frequently to involve cortical vessels, especially the anterior or middle cerebral arteries, but they may also affect vessels supplying the interior of the brain. Bilateral vascular anomalies have been observed, particularly, when occurring close to the mid-line. The internal carotid of the affected side is enlarged and tortuous and occasionally even cardiac enlargement and hypertrophy can be demonstrated. In contrast to true neoplasms, even large arteriovenous malformations do not displace the uninvolved cerebral vessels; this is clearly demonstrated on the anteroposterior projection by the absence of mid-line shift of the anterior cerebral artery. Furthermore, angiomatous vessels are far more bizarre in size than those encountered in vascular neoplasms.

Cavernous angiomas of the brain without associated vascular malformation are usually of small size and of rare occurrence. The experience of the authors with the angiographic characteristics of this type of lesion has been limited to two cases (of the above 8) and is inconclusive.

Intracranial <u>angioblastomas</u> occur almost exclusively in the cerebellum (if one disregards the angioblastic meningiomas, to be discussed below). The authors have had no occasion to examine this type of lesion by angiography.

<u>Meningioma (20 cases)</u>. The meningiomas possess characteristic features which make angiography particularly suited for their recognition. Since they are demarcated, often globular tumors, located at the surface of the brain, they cause circumscribed deformities of adjacent cortical vessels. The cortical arteries in contact with the tumor appear to be distended and separated from one another, whereas the arteries of the adjacent compressed brain are crowded together and form a concentrically arranged corona around the lesion. Although localized displacement of cortical vessels is found in various types of space-occupying lesions, a probable diagnosis of meningioma can be made when cortical arteries are seen to be displaced away from the inner table of the skull.

On venograms following carotid injection, large but short veins with many tributaries appear to outline the circumference of the growth in a garland-like or claw-like fashion, with the larger veins being situated in grooves and depressions between nodules of the tumor surface. The veins of the tumor can be distinguished from normal cortical veins by the abnormal course and large caliber, but short length.

Finally, a typical feature of meningioma is the demonstration of a special vascular network consisting of vessels of capillary or nearly capillary size. In such cases, angiography demonstrates diffuse, uniform, or slightly mottled opacification, silhouetting parts of the tumor or even the entire growth. The x-ray contrast between tumor tissue and brain is explained by the fact that the capillary circulation within the meningioma is both denser and slower than that of the brain, thus producing a local accumulation of contrast material.

<u>Glioblastoma (55 cases)</u>. Glioblastoma is an infiltrating neoplasm which may show a certain degree of demarcation. Some glioblastomas are relatively avascular and contain large areas of necrosis, others exhibit excessive vascularization by poorly formed or pathologic blood vessels. Considerable brain edema is a common feature. All these anatomic characteristics can be recognized in angiograms of glioblastoma.

Due to the infiltrating manner of growth, displacement of cerebral vessels tends to be more diffuse and less profound than is the case in meningiomas of comparable size. Associated edema of the brain is responsible in a large measure for marked vascular displacement. This may give the observer an exaggerated impression of the size of the neoplasm.

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The peculiar vascular pattern within glioblastoma is virtually pathogno-
monic of this neoplasm. Unfortunately, this characteristic vascularity cannot
be shown in all cases by angiographic methods.

The observable angiographic changes occur in the viable periphery of
the neoplasm (the second and third zones), which measures from 3 to 30 mm.
in thickness. The characteristic vascular pattern is produced mainly by the
sinusoids, perhaps also by the "micro-aneurysms." In contrast to menin-
gioma, the blood vessels of glioblastoma are poorly formed and irregular; on
angiograms they may appear blurred; usually they cannot be traced over long
distances and contain contrast medium in a variable degree of concentration.

Two types of special vascular pattern were observed. In the first type,
the tumor exhibits an irregular network of fine crisscrossing vessels. In
addition, there may be a few larger sinusoidal vessels which tend to form
lacunar dilatations and produce spiral or corkscrew patterns. The general
vascular design may resemble the roentgenographic appearance of the nor-
mal lung, although it is more irregular and spotty. Uniform capillary opacity,
as seen in meningioma, is never found in glioblastoma. The second type of
glioblastoma is characterized by a very coarse and bizarre vascular pattern
which resembles that of an arteriovenous malformation. Large malformed
vessels, frequently of larger caliber than normal cerebral vessels, can be
traced through the tumor. They may form spirals or arrange themselves
in parallel layers. Some of these large vessels probably are huge sinusoids;
others may be veins.

In contrast to the true arteriovenous angiomatous malformations, well
defined afferent arteries and efferent veins are not seen in vascular glio-
blastoma; furthermore, there is always displacement of adjacent normal
vessels by the bulk of the tumor. Since vascular glioblastoma has a necrotic
or cystic center, its angiographic appearance (especially on stereoscopic
films) is sometimes that of a sharply demarcated lesion covered by a periph-
eral plexus of vessels. Such tumors possess considerable similarity to cer-
tain vascular meningiomas, but scrutiny of the finer vascular texture will
usually permit a differentiation. Usually, the best pictures of the vascular
pattern of glioblastoma are obtained in the late phase of the arteriogram
from one and a half to two seconds after beginning the injection, but occasionally
the abnormal vessels are better visualized in the initial venous phase.

Astrocytoma (12 cases). Astrocytoma of the cerebral hemispheres fre-
quently is an extensive growth diffusely infiltrating the white matter. Judged
from its gross appearance, parts of a hemisphere or even an entire hemis-
phere may be diffusely enlarged and of increased consistency, sometimes
without other significant macroscopic changes. There is a tendency to inter-
stitial liquefaction and formation of cysts. The supply of blood is relatively

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scanty in astrocytoma and is not demonstrated too well by either angiographic or histologic methods. The angiographic picture of brain edema resembles that of diffuse astrocytoma, but is far less marked in degree.

Other Types of Intracranial Neoplasms. Up to the present, the experience of the authors with angiography in patients with brain tumors has not been sufficiently large to describe a specific vascular pattern in certain of the rarer types of intracranial neoplasm. According to Hemmingson, Egas Moniz, and Engeset, oligodendrogliomas behave like astrocytomas and usually possess no special circulation. Metastatic carcinomas may show increased vascularity, resembling glioblastoma. In meningeal sarcoma, Lorenz observed a rich, double circulation, from the internal and external carotid arteries and also arteriovenous anastomoses. Little is known about the angiographic appearance of ependymoma, pinealoma, and medulloblastoma.

Undoubtedly, preoperative knowledge of the vascularity of a lesion is very helpful to the neurosurgeon. It facilitates the plan of surgical attack in angiomas and meningiomas. With a definite diagnosis of glioblastoma established by angiography, surgery might not be undertaken at all in view of the hopeless prognosis. (Radiology, May '47 - C. F. List and F. J. Hodges)

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Infections and the Developing Embryo: Since 1941, when McAlister Gregg in Australia first drew attention to the connection between rubella during pregnancy and congenital cataract, upwards of fifty papers confirming and extending his findings have been published in Australia, Europe, and the United States. There can now be no doubt that rubella during early pregnancy interferes with fetal development and so produces congenital malformations, of which cataract, deaf-mutism, and heart disease are the most important. But there are indications that so far only the fringe of a larger problem has been touched. The knowledge gained in the last few years has opened up two lines of inquiry, one clinical and one experimental, which may substantially reduce the loss of life from prenatal causes and improve the quality of our infant population. Accurate clinical observations during pregnancy, with special attention to some details hitherto ignored, and the application of the experimental methods of the older embryologists to mammals should together lead to a new concept of the nature of sporadic congenital anomalies and so-called somatic mutations.

It is known from the experiments of such pioneer embryologists as Spemann and Ross Harrison that a sublethal noxious influence acting on a developing embryo will, if it has any demonstrable effect at all, produce an anomaly of structure. This anomaly will be the direct result of interference with cells which are rapidly dividing at the time of application of the noxa;

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and the extent and nature of the anomaly will depend on the stage of develop-
ment of the embryo at the time of the experiment. At a given stage of de-
velopment the degree of protoplasmic activity varies in different parts of the
body, and regions of high activity are electronegative to those of low activity.
These variations are directly related to susceptibility to poisons; curves of
susceptibility can be drawn which will run parallel with the curves of electro-
negative potential and of metabolic and cellular activity for the same regions.
The region of highest activity succumbs first to poisons in high concentration,
but with low concentrations the most active region may be the quickest to be-
come acclimatized. The experimental evidence has been almost entirely
based on the behavior of amphibian embryos, under the impact of such diverse
agents as cyanides, alcohol, heat, cold, ultraviolet light, and alkaloids, Know-
ledge of mammalian reactions is scantier, but the action of x-rays in perma-
nently altering the layering of the developing retina in rats and in man sug-
gests that similar experiments would give similar results. In all cases the
resultant anomaly is specific for the stage of development at the time of the
experiment rather than for the noxious agent used.

More study is needed on the placenta-passing properties of organic and
inorganic, living and nonliving, noxa; the data already obtained indicate a
species variability. Many viruses as well as bacteria and their toxins are
known to pass the placenta in man, and the earlier in development that a sub-
lethal toxin acts, the more likely it is to produce a congenital anomaly. When
viruses, toxins, etc., attack the fetus after the organogenetic period they re-
produce more or less faithfully the disease seen in adults, modified by en-
vironment and the peculiarities of the fetal circulation; they do not lead to
developmental anomalies, except of structures not fully differentiated at the
time. Good examples of the effects of virus infection after fetal differentia-
tion is well established are the cases of intrauterine smallpox in which pla-
cental transmission of the disease after the 4th month of fetal life leaves the
scars of modified pocks. When congenital defects follow maternal rubella,
on the other hand, the mother's illness has usually occurred in the first 3
months of pregnancy. The periods of maximum cellular activity, and there-
fore of maximum susceptibility to attack, are from the 4th to 8th week for
the developing lens, and from the 7th to 10th week for the internal ear; and
in an Australian series the average stage of pregnancy when the rubella oc-
curred was 1.5 months for cataract and 2.1 months for deafness. So far,
therefore, the evidence supports a time specificity, and this is strengthened
by a report of the occurrence of congenital buphthalmos in a case in which
the mother had rubella in the 6th month of pregnancy, for that date coincides
with early differentiation of the iridocorneal angle and of Schlemm's canal.

Reports of evidence that infections other than rubella can produce similar
results so far are scanty. Swan et al. in Australia have reported 18 cases of

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measles in pregnancy, 10 of them in the first four months; 4 of the babies were born with defects. For mumps, they reported 6 cases, 5 babies born with defects and 1 with a nevus; for varicella they reported 2 cases, 1 baby born with heart disease and 1 with a nevus; for herpes zoster 2 cases, both babies born with defects; for scarlet fever 2 cases, 1 baby born with obliteration of bile-ducts. Laforet and Lynch report an example of extensive congenital defects following maternal varicella. Congenital defects have also followed maternal influenza, hepatitis, and poliomyelitis. In some of these the association was no doubt accidental, but the suggestive feature is the frequency of maternal infection at a stage of pregnancy which matches the defects in the child.

Further inquiries, then, should not be confined to rubella, nor to one period of pregnancy, nor to one type of anomaly, but should be planned on a broad basis.

On the clinical side, antenatal supervision must begin earlier than has been the custom. As soon as pregnancy is diagnosed, all febrile illnesses, upsets, accidents, or shocks occurring since just before the mother realized she was pregnant should be noted. This detailed history should be correlated later with a thorough examination of all the infants, and with a study of the family history, to avoid misinterpreting genetic defects fortuitously associated with maternal illness. Teams of investigators working through the antenatal clinics might well tackle such inquiries, and at least one such team is already at work in this country (England). Next, all infectious diseases arising in pregnancy might be made notifiable; it would not be sufficient merely to ask for particulars of pregnancy on the present notification forms, because the "trivial" fevers, which are not notifiable, are important in this inquiry. The need is for all cases of infectious disease in pregnancy to be followed up, whether through the medical officers of health or infant-welfare clinics or otherwise. Experimental work on placenta-passing viruses in mammals may tell us when and how developmental anomalies originate. Rubella, it seems, cannot be transmitted to animals (with the possible exception of chimpanzees), but there are other viruses which attack some of the ordinary laboratory stock. Lymphocytic choriomeningitis of mice will infect the embryo in utero, and canine distemper of dogs is worth considering as an experimental instrument. It might be helpful to extend the experiments with x-rays and chemical poisons to pregnant mammals, and to investigate their effect on the whole embryo at term and at different stages after exposure.

Meanwhile steps should be taken to protect women in early pregnancy against infection. The proved danger from rubella and the possible danger from other infections should be widely known, so that pregnant women will

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do what they can to avoid contact with exanthemas to which they are sus-
ceptible. An instance of intelligent propaganda is the recent notice sent to
parents of boys at a big public school during a rubella epidemic, explaining
the risks to sisters or other relatives who are pregnant. Protection by
means of convalescent serum is already under trial, and if this is successful,
gamma-globulin prepared from such serum will no doubt become obtainable.
But in prophylaxis, as in future research, the accent on rubella should not be
so heavy that other infections, and perhaps trauma and malnutrition too, are
excluded from consideration. (Lancet, 10 May '47)

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Disseminated Granuloma Inguinale of Bones: Granuloma inguinale is
generally considered a local disease affecting the mucous membranes and
skin of the genital and inguinal regions. That on occasions it becomes wide-
spread, extending to other parts of the body, is evident from the review of
Mayer and de Rocha Lima in 1927, and from the more recent paper by Pariser
and Beerman, as well as from isolated reports that in the past few years have
appeared in increasing numbers. Its occurrence in bones was reported as
long ago as 1903-1904 by Hoffman, but reference must be made to the recent
case reports for satisfactory descriptions and illustrations of the osseous
manifestations.

In none of these cases so far reported, including the one of the authors
occurring in a female negro with a primary lesion in the uterine cervix,
are the roentgenological changes specific for the diagnosis of granuloma
inguinale. The lesions in the bones are essentially osteolytic with no re-
action in the overlying periosteum, and with no regeneration of bone. Similar
lesions are observed in such conditions as metastatic carcinoma, leukemia,
Hodgkin's disease, lymphosarcoma, multiple myeloma, and so forth, so that
a diagnosis of granuloma inguinale of bones is impossible without clinical
history and physical examination, assisted by laboratory studies. The loca-
tion of the primary lesion, the persistent secondary anemia, and the marked
constitutional reaction with a continued hectic fever are noteworthy clinical
features. Laboratory studies such as the complement fixation test, the pre-
cipitin test, and cutaneous reactions using antigens derived from cultures
of the organism, Donovania granulomatis, on the yolks of chick embryo will
probably be of distinct diagnostic value, but until these have been standardized
and are readily available, the final diagnosis rests upon biopsy and the finding
of the Donovan bodies and typical phagocytic cells in microscopic preparations.

Osseous lesions of the type described in the presence of obscure genital
lesions should suggest the possibility of disseminated granuloma inguinale.
(Am. J. Roentgenol., May '47 - W. J. Rhinehart and J. T. Bauer)

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Immunity Following the Use of Penicillin and Sulfa Compounds: Is it possible for chemotherapy to be too successful? That is to say, may infection be overcome so exclusively by the chemotherapeutic agent alone that the normal defence mechanism need not function, that no immunity results, and a second attack may consequently follow? There are scattered items of clinical evidence suggesting this. Rantz, Boisvert, and Spink found that when patients with streptococcal sore throats were treated with penicillin antibody formation was deficient. Plummer and his colleagues, studying the same disease, found that a short course of treatment might be followed by a recurrence as severe as the original attack. This is evidently a question worthy and capable of experimental study, and P. E. Harrison has undertaken this with most illuminating results. Rabbits were inoculated intradermally with pneumococci, the so-called "dermal pneumonia" of Goodner being produced. This is a spreading inflammatory lesion of the skin proceeding to septicemia and death, and is advantageous experimentally in that the progress of the lesion can be directly observed. When penicillin treatment was begun in such animals four hours after inoculation, the infection was aborted and no immunity whatever followed. That no immunity followed was shown in three ways, by the fact that neither (1) agglutinin nor (2) protective antibody could be demonstrated in the animal's serum, and that (3) **reinoculation produced a progressive and** fatal infection. On the other hand, when treatment was begun 24 hours after inoculation the spread of infection was still checked and a high degree of immunity which could be demonstrated followed. It is therefore evidently possible for penicillin, given sufficiently early, to eliminate infection with little or no cooperation by the body defense mechanism; this is perhaps to be expected from the fact that its action on bacteria in the early phases of growth is rapidly killing.

These observations are made doubly interesting by parallel tests with sulfapyridine, sulfadiazine, and sulfamerazine. These three drugs acted alike and with results quite different from penicillin. After their administration, the infection became more extensive and was more slowly brought under control, and the immune response was greatest when treatment was begun four hours after inoculation; when it was delayed for twenty-four hours the response was poor, even though the animal recovered. The explanation for this reversal of the findings in the treatment with penicillin derives from the fact that the sulfonamides do not immediately check bacterial growth; therefore bacterial growth continues for a time, liberating further antigen, the quantity of which is apparently optimal for antibody response under the chosen conditions when treatment is begun early. Delay results in the formation of an excess of antigen, which neutralizes some of the antibody formed. That this is the true explanation was proved by demonstrating the specific soluble substance of the pneumococcus in the blood of rabbits treated with sulfapyridine

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at a late stage, and by showing that the injection of this substance depressed antibody formation. Closely comparable results were obtainable in mice, in which the sole criterion was resistance to reinoculation. When the primary peritoneal infection was treated with penicillin the maximum resistance to reinoculation was obtained when treatment had been begun after twelve or eighteen hours. With sulfadiazine, resistance was maximal only when treatment had been begun at the time of inoculation or after two or four hours; with longer intervals the ensuing resistance steadily diminished.

It is of course possible that these findings, especially those concerning the sulfonamides, are not applicable to infections by all bacteria other than the pneumococcus. Even so it seems justifiable to conclude that there is nothing to lose, and probably everything to be gained, by beginning treatment with sulfonamides as early as possible. In the case of penicillin, on the other hand, there is at least a theoretical possibility that very early treatment may have a disadvantage. Whether any further evidence of deficient immunity following prompt penicillin treatment can be gleaned from clinical experience will be known only if this possibility is borne in mind. (Brit. M. J., May 10, '47 - Annotation)

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The Treatment of Hysteric Amnesia by Purely Pharmacologic Means:
Perhaps no condition is fundamentally so psychologic and without any obvious organic background as hysteric, or functional, amnesia. This condition usually arises abruptly and may disappear as suddenly. It is difficult to conceive of an organic or physiologic basis for a memory loss in which the whole or a large part of the past, often including personal identity, as far as the consciousness of the patient is concerned, is lost for long periods and without the slightest evidence of any neurologic disturbance.

Several kinds of treatment have been instituted for this condition. One, in the employment of stimulation of the association processes and through psychologic mechanics, attempts to reopen the shut-off field of memory. Another and popular means utilizes hypnosis, the effort being made to delve into the unconscious, reach motivations for the "escape" process and, by suggestion during and after hypnosis, to cure the amnesia. Still another method is that of psychoanalysis, which in general follows the main directions of this elaborate process, seeking to release the tensions and obstructing mechanisms and thus to integrate the split personality. More recently pharmacologic methods have been developed that have been used mainly in military service and date back earlier than Lindemann's initiatory work on sodium amytal. By the production of narcosis and either by analysis or synthesis the reintegration of the patient is sought. The workers with these methods have

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stressed the psychologic factors, since the emphasis has been laid on the assumed fact that the narcosis, or drug effect, merely gives a handle by which psychotherapy can be applied.

In the treatment of 3 recent cases of hysteric amnesia in private practice, an effort was made to exclude psychologic methods and narcosis and to use drugs that have profound central effects. In certain researches on the effect of amphetamine sulfate (Benzedrine) and similar drugs on sodium amytal narcosis, it was noted that when the two drugs were given simultaneously, narcosis was not reached, but that a mood was produced that can be called exhilaration or something akin to it, and, perhaps more pertinently, a garrulity was noted, often of great intensity in many of the patients hitherto quite retiring and noncommunicative. Therefore, the author utilized the combined effect of amphetamine sulfate - or of Pervitin Hydrochloride (d-N-methyl amphetamine hydrochloride), which is a similar drug and which appears to have a greater central effect than amphetamine as well as producing a greater tendency toward loquacity - and sodium amytal given by mouth in such combined dosage that nothing that could be called narcosis resulted, since only 1 patient became even sleepy. The reorganization of the memory, which was spontaneous and immediate in 2 cases, was brought about in 1 case by simple questions. In all cases an effort was made to exclude any analysis of the psychologic situation of the patient both prior to and after the amnesia. Only enough history was taken to establish a diagnosis, and treatment was instituted immediately. No explanation was made, and the therapeutist excluded his personal influence as far as possible. The results clearly showed that simple pharmacologic methods alone are sufficient to restore the memory of a patient suffering from a profound hysteric or functional amnesia, and that the treatment in these cases demonstrates that the psychologic state was as clearly accessible to pharmacologic treatment as it likely would have been to any other form of treatment.

Two of the cases were posttraumatic; Case 1 arose without any such etiology. As described by the author, the three case histories follow:

CASE 1. A 45-year-old Jewish man found the nature of his work in a defense plant intolerable or, at any rate, disagreeable. He complained a good deal and said that there was much anti-Semitism and that other workers played tricks on him. He grew increasingly irritable, developed insomnia and other neurotic symptoms, and one day became quite violent, excited and noisy while at work. He was taken to a hospital for a short time, after which his family took him home. He had a complete amnesia, which stubbornly persisted after his excitement had entirely disappeared. The amnesia was not only for the period of his work at the defense plant, but for practically everything in the previous 10 years. He could remember his childhood. He did not remember his marriage, nor did he acknowledge his wife, stating that he did not know her. This attitude was maintained unswervingly for about a month, when I saw him for the first time.

The patient was in excellent physical condition, presenting no signs of organic brain disease — in fact, it is clear that such an amnesia is not possible as a direct result of an organic brain accident or injury. From the time of the onset of his illness to the time when I first saw him, his recent memory was intact — that is, the recent experiences were perfectly well assembled, organized and recalled, although past memories and associations for at least 10 years were entirely absent from his consciousness.

Without in any way indicating the purpose of the treatment, I placed the patient and his wife in a separate room in my office suite. He was then given 0.2 gm. (3 gr.) of amytal sodium and 15 mg. of amphetamine sulfate by mouth. I left the room and returned in 45 minutes. I then asked the patient if he recognized the woman to whom he was talking. He immediately answered with a long and detailed statement, speaking rapidly and with some degree of incoherence,

that certainly he recognized her: she was his wife; he went on to answer questions about his past life, sometimes with a slight hesitation, and at other times with none whatsoever. He talked about 1 hour, almost constantly, and at the end of the time had practically reassembled his whole past.

This patient was last seen in June, 1942, and has remained well since then; there has been no gap whatever in his memory.

CASE 2. In this case, the amnesia was much more complete, since the patient completely forgot everything in the past history, including his own identity. This patient, a 50-year-old foreman in a factory, was a skilled mechanic whose past history was entirely free from any overt psychopathology. He was regarded as a well organized, industrious, self-disciplined and controlled person who had nothing resembling a neurosis of any kind. About a year before the time he was first seen, one of his sons had given him a great deal of trouble, which hurt his decided pride in his family name. Although he seemed concerned and humiliated, he continued to work steadily and satisfactorily, carrying out his responsibilities as well as ever. Then while at work he received a blow on the head that was not severe enough to create unconsciousness but was of sufficient momentum to daze him. The back was wrenched at the same time. He complained of severe headache but returned to work the next day, seemed forgetful and confused and complained of the pain in the back and the head almost constantly.

Within 48 hours he became "very wild," ran out of his place of work, assaulted a policeman and talked wildly about the people who were trying to destroy him and his family. He was overpowered, given sedation and quieted down quickly. He was taken home and from that time on until he came to see me 6 weeks later, he presented a complete amnesia. He remembered nothing of his past. He accepted his name as being his own, but he did not remember it. He did not recognize his wife, two devoted sisters or his children. He knew nothing whatever of the place in which he had worked, nor was he able to give any information about his past, his education, his training, his work or any of his experiences. When he came to the office, he stated, "This woman says she is my wife, and this woman states that she is my sister." He was not in any way friendly toward them. He was not affectionate; in fact, he rather resented their solicitude. His answer to every question concerning his past was: "I don't remember. I am told I am so and so, but from my own knowledge I do not know who I am." It was stated, and he agreed, that some things in the town in which he lived seemed familiar to him, and he had on one occasion used the name "Bill" to denote a man whose name was Bill, but he could not give any information concerning this man. He said that this memory had "popped" into his head. It was clear that this amnesia was functional and that no organic lesion could wipe out a man's entire past and leave him entirely coherent and relevant in his speech and without any defect in his recent memories.

The procedure followed in Case 1 was repeated, except that instead of amphetamine sulfate, 10 mg. of Pervitin was used, in combination with 0.2 gm. of amytal sodium by mouth. The patient was left in the room with a sister and his wife, and I passed on to the care of other patients, until 45 minutes had elapsed. When I returned, the patient, after a short period of slight drowsiness, was talking freely to his wife and sister and recalling spontaneously, to their delight, his past experiences. He passed from one theme to another with great rapidity, remembering things that they had forgotten. He was entirely at ease with them and not only knew them but felt that they were his kinfolk. When I addressed him, he asked them who I was and how I happened to be in the examining room. Within a minute or two, however, he had recalled the circumstances of his coming to a doctor's office, and all the gaps of his memory were soon in a fair way to be filled in. When he reported the next

day, the amnesia had entirely disappeared, and so far as his family could determine, he was entirely normal. He talked of his son's delinquency with some sorrow, but with no undue emotion. No attempt was made to explain the situation to him, largely because I am of the opinion that no adequate explanation can be given, and moreover, because in these cases the attempt was made to cure hysteric amnesia with no psychotherapy.

This man was last seen in May, 1944, and has remained entirely well since then. If there is anything psychopathologic left to be cured by any other means, neither the patient nor his family are aware of it.

CASE 3. A 14-year-old girl, in her 1st year of high school, was recently seen. She had had no emotional difficulties of any kind so far as was then known. The family, although poor, lived in harmonious and adequate circumstances. The parents were as kind and understanding as most parents. Her school work was average in its marks and presented no apparent special difficulties. She had plenty of friends. She partook of social affairs freely and joyously. She was too young to have any steady boy friend, but she liked boys and was attractive to them.

Three weeks before I saw her, she went to school in the usual way. It was the morning of a great snow storm. She did not reach the school, and the day went by without any word from her. The parents became alarmed and called the police, and the patient was finally picked up wandering in a distant part of the city. She did not know her name and had no memory of her past. She did not recognize her parents, although she accepted the statement that they were her mother and father. She could give no account of what had happened to her. She recognized the fact that other children in the household were her brothers and sisters and that people who came in were her friends, but the sense of recognition — that is, a chain of memories with a feeling of familiarity — was absent. She seemed apathetic and dull, did not show her usual animation, and was naïvely bewildered. She remained, practically speaking, in this condition until she was brought to see me. A careful physical examination revealed no evidence of any organic disorder, and again it must be stated that it is not probable that any organic disorder could have produced such a complete amnesia with unimpaired consciousness for the present and its events.

The same procedure was followed as in Cases 1 and 2, except that on the first occasion 0.2 gm. of amytal sodium and 10 mg. of amphetamine sulfate were used with relatively little effect; the patient could recall the school she had attended recently, but questions had to be asked for every fact obtained — for example, when asked whether she remembered her teacher's name, after a long pause she assented and gave the name. There was little spontaneous recall, and although some progress was made by the question-and-answer method, the results were not satisfactory.

The patient reported the next day, when 0.2 gm. of amytal sodium and 10 mg. of Pervitin were administered. In about an hour she was questioned about her past. She answered quickly, easily and interestedly. Spontaneously she went on from one fact to another and gave details about the people she had known, often with a humorous twist. She proceeded from the subject brought up to a related subject, bridging the gap with a statement such as "Oh, yes, and now I remember. . . ." By the end of this interview she was gay and, moreover, expressed her gratitude to the physician for his help. She recognized that she had lost her memory and went on suddenly to tell how the amnesia had happened — in other words, to fill in the events of the day on which her memories had become displaced. On her way to school that morning, as she reached a place near it, several boys had thrown snowballs at her. In her frightened attempt to dodge the missiles, she had slipped and fallen heavily on the ice, striking her head. She had got up dazed and from that time

had wandered around in the amnesic state. After her recovery, however, she was able to give details of the places that she had visited, and as she related the happenings of the morning, her face became quite animated and excited while she went from event to event.

This child required one more treatment before all the gaps in memory were filled in, and she completely reintegrated her past and present life and re-formed the bonds of recognition and easy familiarity with the people and things of her milieu. She then came in to see me with a statement of the conditions of her school attendance, which gave at least a plausible explanation of her break up into hysteric amnesia on the occasion of the snow-ball throwing. There were four "tough" girls in her class who took a delight in maliciously teasing and assaulting her. They mocked and derided her genteel manner. They tripped her as she went by them, and on one or two occasions, they roughly handled her, so that going to school each morning was an ordeal and there took place a greater and greater reluctance to enter the school portals. She reached school each day in a state of acute terror, and this terror persisted throughout the whole session. Thus, the main conscious feature of her school attendance was the fear of what these girls might do next. It is conceivable that on the basis of this fear, the assault by the boys with snowballs and her consequent fall brought about the dissociation of hysteria. The fall was merely the immediate physical and psychic trauma to a personality already disorganized by chronic anxiety. This is true of the other cases and probably also of the amnesias that take place in war.

This patient was last seen in March, 1945, and has remained well since then.

It is not contended that all cases of hysteric amnesia are treatable by this simple means alone. Certain ones are far more complicated in psychologic mechanisms and social entanglements than the cases cited above. For example, a young woman whose mother was psychotic and had received shock treatment and whose husband had been discharged from the Army with a diagnosis of psychoneurosis lived in a domestic atmosphere of turmoil and unhappiness that might have been expected from the fact that she and her husband lived with the mother. There were constant bickering, quarreling and extreme emotional tension in the household. From time to time she had attacks of unconsciousness which were hysteric and following which there was an amnesia for a considerable period of time. Each attack was easily cleared up by the use of these drugs, but the treatment in no way prevented further attacks from taking place. During the amnesia, there was stuttering, which was also helped by the drugs but which tended to recur during another attack of amnesia. In this case treatment had to be much more drastic than the simple administration of the drugs, with a change in the whole setup between the patient and her husband and her mother before any lasting therapeutic result was obtained. It should be added that much of so-called "hysteric amnesia" is malingering, and one must be cautious at all times in judging whether or not an amnesia is hysteric or faked.

The essential feature of the treatment of the cases presented above seems to have been in the breaking down of abnormal inhibition and personality attitude that takes place under the influence of powerful drugs and, perhaps more importantly, the communication drive given to the patients by these drugs, the unconscious reticence that is probably the basis of the amnesia being dissolved. To speculate quite without proof, something is set up that says, in essence. "I do not want to remember; I cannot remember." The impetus of the drugs removes this negativism and thus brings about cure. In catatonic dementia praecox, as shown first by Lindemann with sodium amytal narcosis, the same result is obtained temporarily, in that the patient who has been noncommunicative talks freely after the drug narcosis, but, as the effect

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of the drug wears off, the catatonia reasserts itself. The effect of the drugs in hysteric amnesia seems to be lasting, perhaps because it is a relatively mild disorder.

The pharmacologic effect of the two drugs used, as pointed out in previous publications, is reciprocal. As Lindemann's work showed, sodium amytal breaks down negativism and the mutism that goes with it, whereas amphetamine sulfate, and Pervitin especially, not only prevent the narcosis but also have a definite pushing effect, synergistically with the sodium amytal, on the verbal association processes. The combination seems to be ideal to increase communication, especially in the great field of the psychologically hidden. (New England J. Med., 29 May 1947 - A. Myerson)

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Research on the Common Cold: Little has been done in investigating the etiology of the common cold since the work of Dochez and his collaborators in the early part of the last decade. This work fully confirmed the existence of a filtrable agent in nasal and throat washings from persons with colds, which reproduces the disease in a substantial proportion of inoculated subjects, either chimpanzees or human volunteers.

The present status of research in progress was discussed at a meeting of the Epidemiology and State Medicine Section of the Royal Society of Medicine at the Common Cold Research Unit, Harvard Hospital, Salisbury, England, where for about a year, under the auspices of the Medical Research Council and the Ministry of Health, an investigation on the etiology of the common cold has been going on.

Progress is likely to be achieved only when the virus can be propagated in some other way than in the human volunteer or chimpanzee, and among methods which are being tested is propagation in the developing egg. As Andrewes pointed out, there are four different routes for inoculating eggs, and the stage of their development may also affect the result; moreover, of 60 different viruses which have been studied in this way, three-quarters have been successfully propagated. There are therefore good reasons for hoping that this much simplified technic may prove applicable.

Much basic information about the behavior of the agent in active filtrates has already been obtained. An epidemic of colds at Harrow, where the secretions of about 20 affected boys were pooled, furnished a stock of material which has been extensively used. The filtrate of this material retained its activity during storage at -76° C. for over 4 months: it has also been determined that satisfactory activity remains after storage at -10° C. for one month, and that activity is retained at +4° C. for 3 days, which enables material to be transported in an ordinary ice-box instead of being packed in

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carbon dioxide snow. The effect of dilution is not yet certain, and concentration has not been achieved. Particle size has been determined approximately by the use of graded filters, and the indications are that it is of the same order as that of influenza virus, but, since the number of volunteers tested with each filtrate other than that from the standard grade of filter was only 4, this conclusion concerning size must be regarded as only provisional. The incubation period of inoculation colds was most often 2 days, but sometimes 1, 3, or more; they appear to have been mild and uncomplicated, possibly owing to the absence of accompanying bacterial infection. An interesting observation, not easily explained, is that the frequency of positive results from inoculation has been unrelated to the length of the interval which has elapsed since the subject's last natural cold. (Brit. M. J., 10 May '47 - Leading Article)

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Radiocarbon From Cosmic Radiation: It has recently been suggested that neutrons produced by cosmic radiation should form radiocarbon by the reaction $N^{14}(n,p)C^{14}$ in such amounts that all carbon in living matter (and in other chemical forms in exchange equilibrium with atmospheric CO_2 on a 5,000-year time scale) should be radioactive to the extent of from 1 to 10 disintegrations per minute per gram. In view of the 5,000-year half-life of radiocarbon, it was further expected that it should be absent from such geologically "old" carbon sources as petroleum, coal, or limestone. The existence of radioelements produced by cosmic rays was anticipated by one of the authors shortly after the discovery of artificial radioactivity.

These predictions were investigated by examining the radioactivity of two series of isotopically enriched samples of methane. The first series was derived from petroleum methane (referred to as petromethane) and the other from methane from the Patapsco Sewage Plant of the city of Baltimore (referred to as biomethane).

Measurements on the enriched biomethane samples established the activity of "living" carbon to be 10.5 disintegrations per minute per gram, in good agreement with the predicted value. On the other hand, petromethane after enrichment by a factor of 25 failed to show activity beyond the limits of experimental error, in line with the theory that cosmic rays produce this radioactivity.

From the data obtained in the study it was seen that there was no significant activity in the petromethane, whereas the biomethane had a definite, easily measurable activity increasing linearly with the calculated C^{14} enrichment.

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To eliminate the possibility that the activity was due to tritium, the most concentrated methane, sample Bio VIII was burned and converted to $CaCO_3$. The activity of the $CaCO_3$, as measured in a screen wall counter, established the radioactivity as carbon rather than hydrogen. Further identification of this radioactivity was obtained by a measurement of its absorption in aluminum, which agreed with that of synthetic C^{14}. The data thus establish the activity as being carried in carbon in a molecule of mass 18, present in the original biomethane in very low concentration. The agreement of the absorption data with those for C^{14} further confirms the identification of the activity with C^{14}.

The possibility that the C^{14} found in Baltimore sewage was due to contamination is not entirely excluded, although it is remote. The sample studied was taken on 2 September 1946, at which time no C^{14} from the Atomic Energy Commission had been received by anyone in Baltimore. The possibility of the origin of the C^{14} from the atomic piles or bombs is excluded when one realizes that its measured activity corresponded to the existence in nature of some 10^8 curies, or 20 metric tons, an amount far larger than any synthetic source could have produced to date.

The discovery of cosmic-ray carbon has a number of interesting implications in the biological, geological, and meteorological fields; a number of these are being explored, particularly the determination of ages of various carbonaceous materials in the range of 1,000-30,000 years.

This investigation is continuing with other sources of carbon and is being extended to other possible cosmic-ray-produced radioelements. A more detailed report will be published elsewhere. (Science, 30 May 1947 - E. C. Anderson et al.)

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Preliminary Studies on the Control of Blowflies with DDT: Preliminary studies on the use of DDT in the control of several species of blowflies (Calliphoridae) were made to gain information on methods of application, the effectiveness of the spray material, and the duration of effective control.

The tests were made in a group of establishments that included a retail fish market, an abattoir, a seafood plant, and a hide-processing plant. Of the several species of flies found present, those of the genera Cochliomyia and Lucilia were most common.

The habits of the blowfly vary greatly from those of the housefly, and alterations of the technics of spray application are necessary. Some of the habits of blowflies to be considered in the effective use of DDT sprays are:

The use of scattered night resting places, such as on the sides of buildings, under eaves, in open sheds, under miscellaneous trash materials, and especially on the upper portions of such vegetation as weeds, bushes, and small trees near the daytime feeding places of the blowflies; a preference for putrefying food material, such as offal, fish, blood, and decaying fruits and vegetables; the ability to fly for great distances; the tendency to alight only on food and to fly from one piece to another without resting to any appreciable extent on the flooring, walls, and ceilings; and the infrequency with which buildings are entered.

In estimating the pretreatment and posttreatment fly-population indices, the grill-device method of sampling was used. This method consisted of placing a 3-foot-square grillwork, having alternate 3/4-inch slats and open spaces, on any surface attracting a concentration of flies. After the flies had been aroused and had resettled, the number of flies resting on the grill was counted. Five such counts were made at the points of maximum concentration in each of several areas. From each location, the maximum count was taken, and from these, a definite number (approximately three-fourths) of the highest counts were averaged to give an index figure of maximum fly nuisance.

The use of the grill device is not as satisfactory for sampling a blowfly population as it is for sampling houseflies, since blowflies do not remain on the grill as long as houseflies. Soon after alighting, they tend to pass through the open spaces of the grill and go to the attractant beneath it. This is especially true when large numbers are present, and competition for an undisturbed resting or feeding place exists. Consequently, with heavy concentrations, one has time to count only the most representative quadrant of the grill, and to use the number thereon as one-fourth its entire capacity.

Even with this disadvantage, this method was still superior to any other sampling method tried. Its advantages over the well-established bait trap, sweep net, and other methods are that it does not attract flies but samples those already present; it does not drive the flies away by violently disturbing them; it is mobile and permits the sampling of a population wherever the maximum concentrations occur; it does not depend upon a competitive attractant; it is a time saver in that samples can be taken very rapidly; and it is easily and cheaply constructed.

In all inspections only the blowflies were counted. Other flies, such as the housefly and the stablefly, were not included in the grill counts.

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In all operations a 5-percent-DDT emulsion was used. It was made by adding 6 gallons of water to 1 gallon of a stock solution containing 35-percent DDT (w/v) dissolved in xylene, with 4 per cent of the emulsifier, Triton X-100. This emulsion was applied at a rate of 200 and 300 mg. DDT per square foot.

The results of the preliminary tests showed that the variation in the degree of control achieved by spraying around the daytime habitat was dependent to a large extent on the relationship between the daytime habitat and the night resting places of the flies and the extent to which the night resting places were treated. At establishments where only the area about the daytime feeding places of the blowflies was treated, control was obtained for a 2- to 3-week period. At establishments where the night resting places were treated in addition to the area around the daytime feeding places, effective control of the blowflies was obtained for periods up to 3 months. (Pub: Health Reps., May 30, '47 - W. C. Baker and L. G. Schwartz)

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Diagnostic Culture of Mycobacterium Tuberculosis: Within the past few decades, diagnostic culture methods for determining the presence of the causative organisms of mammalian tuberculosis in pathological materials have superseded animal inoculations which were preferred in diagnostic laboratories prior to this. The conviction that a simple and accurate culture method for use in the diagnosis of tuberculosis should be developed has led to persistent and laborious trials of many procedures.

In the search for a more suitable reagent than sodium hydroxide, or one that would be adaptable to elaboration with the oxalic acid reagent, Corper and Stoner studied trisodium phosphate, a crystalline, chemically pure and stable alkaline salt, for its effect upon the bacilli of mammalian tuberculosis. It was found that this reagent possessed a number of decided advantages for destroying contaminations in sputum, urine, gastric contents, and pus in preparation for the cultivation of M. tuberculosis in clinical, pathological, and public health work. The advantages were that a 23 per cent trisodium phosphate ($Na_3PO_4 \cdot 12H_2O$) solution in equal volume added to these specimens could remain in contact at room temperature for up to seven days without harm to the acid-fast bacilli, and this amount and time sufficed in most cases to destroy all contaminants found in the usual pathological specimen. Trisodium phosphate in 23 per cent solution used in equal volume with specimens to be studied accomplishes the same objectives when incubated at 37° C. for 24 hours. This prolonged contact period with uncritical end-point enables the technician to prepare his material without rush and eliminates the usual cautious watch period necessitated by all reagents previously described with

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which neutralization had to be performed within from one-half to two hours, frequently breaking up the day's continuity in laboratory work because of the necessary almost constant handling.

Combining the phosphate treatment with Corper's egg-yolk medium provides a simple diagnostic procedure to isolate M. tuberculosis hominis and M. tuberculosis bovis from routine specimens. It is recommended on the basis of extensive routine tests in public health work. (Am. Rev. Tuberc., April '47 - M. Van Vranken)

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Procedure for Reappointment under the Transfer Program of Medical Officers Resigned from the U. S. Naval Service: It is believed that a number of medical officers terminating their naval service at this time by resignation may, after a short period in civil practice, desire to return to a career in naval medicine.

Because the majority of resignees are more than 32 years of age, and reappointment could not therefore be accomplished under current regulations, the Bureau of Medicine and Surgery, in order to establish a channel for the reappointment of these prospective candidates, recommended to the Chief of Naval Personnel that resignees subsequently appointed in the U. S. Naval Reserve be declared eligible for reappointment in the Medical Corps of the regular Navy under the terms of the current transfer program.

On the basis of existing law the Chief of Naval Personnel approved the recommendation subject to the following:

(a) He shall have served in a reserve status on active duty during World War II prior to acceptance of a permanent commission.

(b) He shall have served in a reserve status on active duty during World War II subsequent to resignation. (To be eligible under this provision the resignee must be appointed and called to active duty in the Naval Reserve prior to the termination of World War II.)

Accordingly, all Medical Corps resignees who meet prescribed physical and professional standards will be invited by the Bureau of Naval Personnel to accept an appointment in the Medical Corps of the U. S. Naval Reserve following the effective date of their resignation from the U. S. Navy.

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Thus, in accordance with the above, until such time as the President of the United States officially decrees the termination of World War II, all Medical Corps resignees (Reserve or regular) who meet prescribed physical and professional standards are eligible for reappointment in the U. S. Navy.

Whether or not a resignee may believe that he might later wish to be reappointed in the Medical Corps, USN, it is urged that, in the interests of the development of an effective Naval Reserve, he accept a commission in the Naval Reserve. (Personnel Div., BuMed)

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(Not Restricted)

Course in Tropical Medicine and Hygiene, London, England: The Bureau of Medicine and Surgery announces the availability again of a six months' course in Tropical Medicine at the London School of Hygiene and Tropical Medicine, London, England. Prior to the war, U. S. Naval medical officers were in attendance intermittently. Two courses are now being given per year, and it is planned to have at least one medical officer under instruction in each one. It is contemplated that assignment to this course will constitute a permanent change of station, permitting the candidate to have his family accompany him. It is planned that the medical officer trainee will report for instruction at least two weeks prior to the beginning of each course for indoctrination and preliminary arrangements.

Upon the completion of the course it will be necessary for the medical officer to appear at Examination Hall in London for examination by The Examining Board in England. This board is often spoken of as The Conjoint Board because its examining members are from both The Royal College of Physicians of London and The Royal College of Surgeons of England. Those who successfully pass the examination are awarded the Diploma in Tropical Medicine and Hygiene (England), which is usually designated as D.T.M. & H. (Eng.), and is recognized throughout the world as a distinction. The fee for the course together with that for admission to the examination will be paid for by BuMed from training funds. (In most instances fees for examinations cannot be paid by the Navy.)

The first course to which a naval medical officer would be assigned will start 2 March 1948 with the examination for the diploma scheduled for 23 July 1948.

Requests are desired from interested medical officers of the regular Navy and must contain a signed three-year clause. Applications should include a recent 2" x 3" photograph. (Professional Div., BuMed)

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(Not Restricted)

List of Available Training in Civilian Institutions: In order tc keep medi-
cal officers informed of the progress made in the Graduate Training Program,
courses and other types of training in civilian institutions available to medical
officers are listed below. This list of available training should not be confused
with the list of residencies in all of the specialties recognized by the Specialty
Boards and available in naval hospitals.

In general, and when practicable, requests should be submitted 3 or 4
months prior to the beginning of the training. Requests may be submitted
by despatch providing the necessary service agreement follows by regular
mail. The application form for further training has been slightly modified,
as contained in the Bumed News Letter dated 23 May 1947. Inquiries regard-
ing this training may be directed to the Professional Division of the Bureau
of Medicine and Surgery at any time.

TRAINING IN CIVILIAN INSTITUTIONS

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
		ALLERGY			
1	University of Illinois		Course	12 Months	9-29-47
		ANESTHESIA			
3	Mayo Clinic		Course	6-12 Mos.	every quarter
1	University of Chicago		Course	12 Months	7-1-47
1	George Washington Univ.		Course	12 Months	any time
		BRONCHO-ESOPHAGOLOGY			
2	University of Illinois		Course	2 Weeks	any time
		CARDIOLOGY			
1	Mass. General Hospital		Preceptorship	12 Months	10-1-47
		DERMATOLOGY & SYPHILOLOGY			
2	Northwestern University		Course	9 Months	10-6-47
2	Skin and Cancer Unit of the N.Y. Postgraduate Med. Sch. of Columbia University		Course	11 Months	10-1-47

(Not Restricted)

No. of Places	Institution	Specialty	Type of Training	Duration	Starts

DERMATOLOGY & SYPHILOLOGY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Harvard University		Course	11 Months	10-1-47
1	University of Pennsylvania		Course	8 Months	10-6-47

(It is possible additional places may become available.)

DISEASES OF THE CHEST

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
*(6	Trudeau Sch. of Tuberculosis		Course	4 Weeks	9-1-47
(6	Bellevue Hospital, New York City		Course	2 Weeks	10-1-47

*Course runs concurrently.

ENDAURAL FENESTRATION

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Lempert Otological Institute		Course	6 Weeks	any time

(Open only to diplomates of American Board of Otolaryngology.)

GASTRO-ENTEROLOGY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	University of Pennsylvania		Course	12 Months	10-1-47

(Open only to officers who have had a recognized course in
Internal Medicine or a recognized Residency in Internal
Medicine and Diplomates of American Board of Internal Medicine.)

INTERNAL MEDICINE

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Northwestern Univ. (Cook Co. Hospital)		Course	12 Months	7-1-48
1	Northwestern Univ. (Cook Co. Hospital)		Course	12 Months	1-1-48
1	State University of Iowa		Fellowship	12 Months	10-1-47
6	University of Pennsylvania		Course	8 Months	10-6-47
5	Cornell University Medical School (Intensive course)		Course	6 Months	10-1-47
1	Mayo Clinic		Course	12 Months	10-1-47
1	Mayo Clinic		Course	12 Months	7-1-48
1	Strong Memorial Hospital (First-Year Resident Level)		Residency	12 Months	7-1-48
1	Temple University		Fellowship	12 Months	7-1-47
1	London School of Tropical Medicine		Course	6 Months	3-2-48
1	Tulane Univ. (Tropical Medicine)		Course	9 Months	10-1-47

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
		NEUROSURGERY			
1	Marquette University		Preceptorship	12 Months	9-1-47
1	Mass. General Hospital		Preceptorship	24 Months	7-1-48
1	Lahey Clinic		Fellowship	12 Months	10-1-47
1	Emory Univ. (Grady Hospital)		Fellowship	12 Months	3-1-48
1	University of California		Fellowship	24 Months	7-1-47
		OBSTETRICS & GYNECOLOGY			
2	University of Pennsylvania		Course	8 Months	10-6-47
		ONCOLOGY			
1	Memorial Hospital, N.Y.C. (Surgery)		Assistant Residency	18 Months	7-1-47
1	Memorial Hospital, N.Y.C.		Special Grad. Fellowship	12 Months	7-1-47
		OPHTHALMOLOGY			
2	University of Pennsylvania		Course	8 Months	10-6-47
2	Washington Univ. of St. Louis (Second-Year Level)		Course	8 Months	10-1-47
1	Illinois Eye & Ear Infirmary (Second-Year Resident Level)		Course	12 Months	7-1-48
1	Tulane University		Course	12 Months	7-1-48
1	University of Michigan (Third-Year Resident Level)		Course	12 Months	7-1-47
1	Boston City Hospital		Internship	12 Months	10-1-49
1	Northwestern University		Course	9 Months	10-1-47
1	Mass. Eye & Ear Infirmary		Residency	27 Months	9-29-47
	(Selections made by competative exam given by Mass. Eye and Ear Infirmary and BuMed)				
1	University of Chicago		Residency	12 Months	7-1-47
		ORTHOPEDICS			
1	James W. Riley Memorial Hospital		Residency	12 Months	1-1-48
1	Lahey Clinic		Fellowship	12 Months	10-1-47
1	Lahey Clinic		Fellowship	12 Months	7-1-48
1	Washington Univ. of St. Louis (Second-Year Level)		Fellowship	12 Months	7-1-47
1	Cleveland Clinic		Fellowship	12 Months	1-1-48

No. of Places	Institution	Specialty	Type of Training	Duration	Starts

ORTHOPEDICS (Children's)

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	The State Univ. of Iowa		Course	10 Months	9-1-47
2	Duke University		Residency	12 Months	1-1-48
1	University of Oklahoma		Residency	12 Months	7-1-47
1	St. Charles Hospital, N.Y.C.		Residency	12 Months	7-1-47
1	Children's Hospital, Boston, Mass.		Residency	12 Months	7-1-47

OTOLARYNGOLOGY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	New York Hospital, N.Y.C.		Fellowship	12 Months	2-1-48
1	University of Illinois		Course	9 Months	10-7-47
1	Northwestern University		Course	9 Months	10-1-47
3	University of Pennsylvania		Course	8 Months	10-6-47
1	Washington University of St. Louis		Fellowship	8 Months	9-16-47

PATHOLOGY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Indiana University		Course	12 Months	7-1-47
1	Henry Ford Hospital		Fellowship	12 Months	7-1-48
1	Mayo Clinic		Course	12 Months	7-1-48
1	Wayne Univ. Medical College (Second-Year Level)		Fellowship	12 Months	7-1-48
1	University of Michigan (Third-Year Level)		Fellowship	12 Months	7-1-48

PHYSICAL MEDICINE

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
2	Mayo Clinic		Fellowship	12 Months	every quarter

(In connection with a grant from the Baruch Committee on Physical Medicine, inquiries invited from interested medical officers; additional information is available in BuMed)

PSYCHIATRY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Payne Whitney Psych. Div., N.Y. Hospital, New York City		Fellowship	12 Months	6-1-48
1	Jefferson Hospital, Phila., Pa.		Fellowship	12 Months	7-1-48
1	N.Y. Neurological Institute		Fellowship	12 Months	5-1-48
1	N.Y. Psychiatric Institute		Fellowship	12 Months	7-1-48
2	Langley Porter Clinic, Univ. Calif.		Fellowship	12 Months	9-8-47 & 4-1-48
1	University of Louisville		Fellowship	12 Months	any time

No. of Places	Institution	Specialty	Type of Training	Duration	Starts

PSYCHIATRY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
2	Penn. Hosp. for Mental & Nervous Diseases, Phila., Pa. (For Flight Surgeons)		Fellowship	12 Months	9-1-47
1	Penn. Hosp. for Mental & Nervous Diseases, Phila., Pa.		Fellowship	12 Months	5-1-48
1	Phila. Child Guidance Clinic		Fellowship	10 Months	10-1-47
1	Illinois Psychiatric Institute, University of Illinois		Course	12 Months	4-1-48

PHYSIOLOGY
(Leading to Master's Degree of Medical Science)

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	University of Southern California (Concerned mainly with the Physiology of Acceleration. Graduates may expect duty in Aviation Research or teaching assignments.)		Course	9 Months	10-1-47

PUBLIC HEALTH

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
2	Harvard University		Course	8 Months	9-1-47
5	Johns Hopkins University		Course	8 Months	9-30-47
1	Johns Hopkins University (Courses in Medical Statistics, Tropical Medicine, and Industrial Medicine and Venereal Disease Control arranged upon request.)		Assistantship	11 Months	7-1-48

All leading to the degree, Master of Public Health.

APPLICATION OF RADIOACTIVE SUBSTANCES IN MEDICAL SCIENCES

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	University of California (Open only to Internists. Details will be announced later.)		Course	Undetermined	

RADIOLOGICAL PHYSICS

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Research Cancer Section, Columbia University		Course	12 Months	7-1-47

RADIOLOGICAL SAFETY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
2-4	University of California (Arranged upon request.)		Course	12 Months	any time

(Not Restricted)

No. of Places	Institution	Specialty	Type of Training	Duration	Starts

RADIOLOGY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Johns Hopkins University		Fellowship	12 Months	7-1-48
1	Washington Univ. of St. Louis		Fellowship	12 Months	7-1-48
1	New York Hospital, N.Y.C.		Fellowship	12 Months	7-1-48
1	Lahey Clinic		Fellowship	12 Months	10-1-48
1-2	Harper Hospital, Detroit, Mich.		Residency	12 Months	1-1-48
1	The State University of Iowa		Residency	12 Months	7-1-48
1	Henry Ford Hospital (Any Level)		Residency	12 Months	10-1-47
3	University of Pennsylvania		Course	8 Months	10-1-47

SURGERY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	Cleveland Clinic		Fellowship	24 Months	10-1-47
1	Northwestern Univ. (Cook Co. Hospital)		Fellowship	12 Months	1-1-48
1	*Philadelphia General Hospital		Residency	12 Months	7-1-47
6	University of Pennsylvania		Course	8 Months	10-1-47
1	State University of Iowa		Fellowship	12 Months	10-1-47
2	Lahey Clinic		Fellowship	12 Months	10-1-47
2	University of Illinois		Fellowship	12 Months	10-1-47
2	University of Illinois (Basic Science Surgical Specialties)		Course	9 Months	10-1-47 or 1-1-48

*Open only to officers who interned at this hospital.

UROLOGY

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
1	University of Michigan (Second-Year Level)		Residency	12 Months	7-1-48
1	James B. Brady Foundation		Fellowship	12 Months	4-1-48
1	Washington Univ. of St. Louis		Fellowship	12 Months	10-1-47
1	Tulane University		Fellowship	12 Months	1-1-48

LAW

No. of Places	Institution	Specialty	Type of Training	Duration	Starts
3	George Washington University (1 Officer will be started in Law each September for three (3) years.)		Course	36 Months	9-22-47

(Professional Div., BuMed)

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Thoracic Surgery Residencies: The Bureau of Medicine and Surgery announces the availability of residencies in thoracic surgery at the U. S. Naval Hospital, St. Albans, New York. A Department of Thoracic Surgery has been established in this hospital and the service can accommodate two residents. The residencies will be of two years' duration with one becoming available every July 1st.

In order to start these residencies on a rotating basis, the first resident has been placed for a duration of one year. This leaves the two-year residency beginning 1 July 1947 open. It is desired that the trainee have the equivalent of at least two years of acceptable training in surgery prior to entering training in thoracic surgery. Surgical residents who are at present in naval hospitals are eligible for consideration as well as others with the equivalent in training and experience.

Requests are invited from medical officers interested in the opening for the full two-year residency scheduled to begin 1 July 1947. Applications should be submitted in accordance with Bumed News Letter, 23 May 1947, page 22, and may be submitted by despatch. (Professional Div., BuMed)

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Circular Letter 47-68   29 May 1947   (Not Restricted)

To: All Ships

Subj: Medical Department Allotments, Fiscal Year 1948.

Ref: (a) BuMed CirLtr 46-178 dated 12 Dec 1946 -
           (N.D. Bulletin 46-2233 of 15 Dec 1946).

1. Instructions contained in reference (a) will remain in effect during
fiscal year 1948, with the following exceptions:

> Paragraph 1:
>
> Add:
>
>   AGS $ 240
>
> Delete:
>
>   AVS $ 60
>   LSV   60
>   ABSD   240

                          --BuMed.   C. A. Swanson

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Circular Letter 47-69   3 June 1947   (Not Restricted)

To: MedOfCom, All U. S. Naval Hospitals

Subj: Hospital Accounting Instructions (Statement of Hospital Personnel,
       In-Patient and Out-Patient)

Ref: (a) BuMed CirLtr No. 46-136.

Encl: 1. (HW) Revised pages 200, 201, 202 and 206, Hospital Accounting
          Instructions.

    This letter from the Chief of BuMed states that the subject report shall
be submitted for fiscal year 1947 as required by reference (a) and directs
the deletion of pages 200, 201, 202, and 206, and use of enclosures together
with an addition furnished for top of page 203.

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Circular Letter 47-70   9 June 1947   (Not Restricted)

To: Commander, All Sea Frontiers; Commandants, All Naval Districts
        and River Commands; Chief, Naval Air Training.

Subj: Inspection of Naval Medical Department Activities by District
        Medical Officer, or Senior Staff Medical Officer.

Refs: (a) BuMed CirLtr 46-2 dtd 3 Jan 1946.
        (b) BuMed CirLtr 46-142 dtd 27 Sep 1946.
        (c) Chapter 2D, Manual of the Medical Department, U. S. Navy
            (Rev. 1945).

        This letter from the Chief of BuMed cancels references (a) and (b)
and directs that District Medical Officers and Senior Staff Medical Officers
periodically conduct general inspections of each Medical Department activity
located within the administrative control of the command concerned. The
inspections are to be thorough and conducted as frequently as conditions
indicate but not less than annually. Reports of these inspections, with appro-
priate recommendations, shall be prepared with the least possible delay, and
forwarded first through the Commanding Officer of the Naval Hospital or
Medical Department Activity inspected and thence via official channels, to
the Chief of the Bureau of Medicine and Surgery. Each activity through which
the report is routed shall state by endorsement the action taken, or to be
taken, regarding recommendations contained therein. The Bureau plans to
distribute, in the near future, a "Guide" in condensed form for the purpose
of aiding, insofar as practical, inspecting officers in standardizing inspections
and submitting uniform reports. This directive does not in any way concern
the quarterly sanitary inspections and reports as required by paragraph 12D5
of reference (c).

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Circular Letter 47-71   9 June 1947   (Not Restricted)

To: All Naval Hospitals

Subj: Operation of Ship's Service Laundries in Conjunction with Naval
        Hospital Laundries.

Refs: (a) BuMed CirLtr 47-47 dated 14 April 1947
        (b) NSSO ltr S33/N4-6(3) dated 14 May 1947
        (c) NSSO dispatch 271610Z of May 1947

(Not Restricted)

Encl: 1. (HW) Copy of ref (b).

This letter from the Chief of BuMed calls attention to the fact that reference (c) modifies reference (b) in that it extends to 30 June 1947 the termination of participation of Ship's Service Stores in the operation of hospital laundries. It is pointed out that local administrative heads can arrange with local civilian or naval station laundries to provide laundry services for personnel. In some instances, especially hospitals in close proximity to other naval activities, such service is provided by local laundries on a daily or biweekly basis. Therefore, it is recommended that Medical Officers in Command of Naval Hospitals make arrangements with local laundries to provide such services prior to 30 June 1947.

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Circular Letter 47-72   12 June 1947   (Not Restricted)

To: MedOfsComd, NavHosps, Continental United States.

Subj: Tuberculosis, Submission of Report to the U. S. Public Health Service.

Ref: (a) Par. 16A8.3, MMD.

1. Information at hand indicates that the provisions of reference (a), quoted below, are not being uniformly observed in various Naval Hospitals.

    "16A8.3. Upon the discharge of a person from the naval service on whom a diagnosis of pulmonary tuberculosis has been definitely established, the medical officer in command of the hospital in which the separation from the service is culminated shall notify the Tuberculosis Control Division, U. S. Public Health Service, Bethesda 14, Maryland, giving the information as stated in 16A8.2(c)."

2. The reporting procedure should be followed in all instances.

                        --BuMed.   H. L. Pugh

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